

I CLAIM

1. A structure for fastening the steering tube and the handlebar of a bicycle to each other, said structure comprising:

5 a U-shaped frame having two parallel legs which are joined together at one end to form a crown portion and said legs are each provided in proximity of a free end thereof with a through hole dimensioned to allow the passage of said steering tube, said crown portion being provided with an inner wall having a curvature to accommodate a bicycle handlebar, said frame also being provided with a receiving space located between said two legs;

10 a steering tube rest having opposing sides and being provided on one of said opposing sides with a curvature to accommodate said steering tube, and being provided on the other of said opposing sides with a first sloping surface and a second sloping surface symmetrical to said first sloping surface, said steering tube rest being disposed in said receiving space of said frame in such a manner that said
15 curvature of said steering tube rest comes in contact with said steering tube;

a handlebar rest having opposing sides and being provided on one of its opposing sides with a curvature to accommodate said handlebar, and being provided on the other of its sides with a first sloping surface and a second sloping surface symmetrical to said first sloping surface, said handlebar rest being disposed in
20 said receiving space of said frame in such a manner that said curvature of said handlebar rest comes in contact with said handlebar;

a first press block provided with opposing sides and being provided on one of said opposing sides with a first sloping surface symmetrical to said first sloping surface of said steering tube rest, and being provided on said other of its opposing sides with a second sloping surface symmetrical to said first sloping surface of said handlebar rest, said first press block being further provided with a threaded through hole, whereby said first press block is disposed in said receiving space of said frame in such a manner that said first press block is located between said secured tube rest and said handlebar rest, and that said first sloping surface of said first press block comes in contact with said first sloping surface of said steering tube rest, and that said second sloping surface of said first press block comes in contact with said first sloping surface of said handlebar rest;

a second press block provided with opposing sides and having on one of its opposing sides a first sloping surface symmetrical to said second sloping surface of said steering tube rest, and on the other of its sides with a second sloping surface symmetrical to said second sloping surface of said handlebar rest, said second press block being further provided with a stepped through hole, whereby said second press block is disposed in said receiving space of said frame in such a manner that said second press block is located between said steering tube rest and said handlebar rest , and said second press block is separated from said first press block by a distance, and that said stepped through hole of said second press block is aligned with said threaded through hole of said first press block, and that said first sloping surface of said second

press block comes in contact with said second sloping surface of said steering tube rest,
and that said second sloping surface of said second press block comes in contact with
45 said second sloping surface of said handlebar rest; and

a fastening bolt engaging said threaded through hole of said first
press block via said stepped through hole of said second press block, whereby said bolt
is fastened with said threaded through hole when said first press block and said second
press block move toward each other, thereby causing said first press block in said
second press block to press against said steering tube rest and said handlebar rest.

2. A clamp for fastening a bicycle handlebar to a bicycle steering tube
comprising:

a mounting bracket formed as a clevis having a pair of flat,
mutually parallel legs and emanating from a yoke, thereby defining a receiving space
5 between said legs and within said yoke, and said yoke is formed with a concave inner
surface that conforms in shape to the outer surface of said handlebar, and coaxially
aligned apertures are defined through said legs remote from said yoke and said
apertures are configured to conform to the shape of the outer surface of said steering
tube and to receive said steering tube therethrough,

10 a steering tube saddle block located within said receiving space
remote from said yoke and having opposing ends and a concave face directed away
from said yoke and an opposite wedging face directed toward said yoke and wherein
said wedging face has opposing wedging surfaces inclined toward said yoke from said

opposing ends of said steering tube saddle block,

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a handlebar saddle block located within said receiving space proximate said yoke, and having opposing ends and a concave face directed toward said yoke and an opposite wedging face directed away from said yoke, and said wedging face has opposing wedging surfaces inclined away from said yoke from said opposing ends of said handlebar saddle block,

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first and second wedges both having wide ends and narrow ends and inserted into said receiving space between said saddle blocks with said narrow ends of said first and second wedges directed toward each other, and both of said wedges have inclined surfaces that are oriented perpendicular to said mounting bracket legs and said inclined surfaces of said wedges reside in face-to-face arrangement with said inclined surfaces of said saddle blocks and are complementary to said inclined surfaces of said saddle blocks, and said wedges both have coaxially aligned fastening bolt bores that extend therethrough from end to end, wherein said fastening bolt bore through said first wedges is internally tapped and said fastening bolt bore through said second wedge is stepped, and

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a fastening bolt having a head seated at said wide end of said second wedge and a shank extending through said bore in said second wedge and into said bore of said first wedge, and said fastening bolt is engageable to draw said wedges toward each other, thereby concurrently forcing both of said saddle blocks away from each other and into clamping engagement with said steering tube and said handlebar.

3. A clamp according to Claim 2 wherein both of said wedges have identical outer surface configurations, and said wedges are both configured in the shape of trapezoidal prisms.

4. A clamp according to Claim 2 further comprising smooth slide plates interposed between said wedges and said saddle blocks.

5. A clamp according to Claim 2 wherein said inclined surfaces of each of said saddle blocks meet each other, thereby forming apices that are oriented perpendicular to said legs of said clevis.

6. A clamp according to Claim 5 wherein said legs of said mounting bracket have parallel opposing lateral edges and said apices of said saddle blocks are centered laterally between said opposing lateral edges of said legs.

7. A clamp according to Claim 2 wherein said concave surfaces of both of said saddle blocks are both shaped as semicylindrical, arcuate sectors.

8. A clamping stem for fastening a bicycle handlebar to a bicycle steering tube comprising:

a U-shaped mounting bracket having a pair of flat, mutually parallel opposing legs and a central yoke located therebetween, thereby defining a receiving space between said legs and said yoke, and coaxially aligned identical apertures are defined through said mounting bracket legs and said apertures are both of a size and shape to conform to the outer cross-sectional shape of said steering tube and said apertures receive said steering tube therethrough,

a steering tube saddle block that fits into said receiving space

10 adjacent said apertures in said legs, and said steering tube saddle block has opposing extremities and a concave seating surface facing away from said yoke and a pair of opposing inclined surfaces oriented perpendicular to said legs and both inclined in a direction toward said yoke from said extremities of said steering tube saddle block,

a handlebar saddle block that fits into said receiving space

15 proximate said yoke, and said handlebar saddle block has opposing extremities and a concave seating surface facing toward said yoke and having a size and shape to conform to the surface of said handlebar, and said handlebar saddle block has a pair of opposing inclined surfaces oriented perpendicular to said legs and both inclined in a direction away from said yoke from said extremities of said steering tube saddle block,

20 first and second wedges both having inclined surfaces that match

said inclined surfaces of said saddle blocks, and both having wide ends and narrow ends, and said wedges fit into said receiving space between said saddle blocks from opposing sides of said U-shaped mounting bracket with said narrow ends of said wedges facing each other, and said first wedge has an internally tapped bore therewithin
25 with a clamping screw entry opening in said narrow end of said wedge, and said second wedge has a stepped through hole bore extending between said ends of said second wedge, and said through hole bore is smaller in area at said narrow end of said second wedge than at said wide end thereof, and said through hole bore is coaxially aligned with said bore in said first wedge, and

30 a fastening bolt having a head and an externally threaded shank,
whereby said shank of said fastening bolt extends entirely through said through hole
bore of said second wedge and is threadably engaged in said internally tapped bore of
said first wedge, whereby advancement of said bolt shank within said wedges drive said
wedges toward each other, thereby forcing said saddle blocks toward opposing ends of
35 said mounting bracket to thereby clamp said steering tube saddle block against said
steering tube and clamp said handlebar saddle block against said handlebar, thereby
immobilizing said steering tube and handlebar relative to each other.

9. A clamping stem for fastening a bicycle handlebar to a bicycle steering
tube comprising:

a U-shaped mounting bracket having a pair of flat, mutually
parallel opposing legs and a central yoke located therebetween, thereby defining a
5 receiving space between said legs and said yoke, and coaxially aligned identical
apertures are defined through said mounting bracket legs and said apertures are both of
a size and shape to conform to the outer cross-sectional shape of said steering tube and
said apertures receive said steering tube therethrough,

a steering tube saddle block that fits into said receiving space
10 adjacent said apertures in said legs, and said steering tube saddle block has opposing
extremities and a concave seating surface facing away from said yoke and a pair of
opposing inclined surfaces oriented perpendicular to said legs and both inclined in a
direction toward said yoke from said extremities of said steering tube saddle block,

a handlebar saddle block that fits into said receiving space

15 proximate said yoke, and said handlebar saddle block has opposing extremities and a concave seating surface facing toward said yoke and having a size and shape to conform to the surface of said handlebar, and said handlebar saddle block has a pair of opposing inclined surfaces oriented perpendicular to said legs and both inclined in a direction away from said yoke from said extremities of said steering tube saddle block,

20 first and second wedges both having inclined surfaces that match said inclined surfaces of said saddle blocks, and both having wide ends and narrow ends, and said wedges fit into said receiving space between said saddle blocks from opposing sides of said U-shaped mounting bracket with said narrow ends of said wedges facing each other, and said first wedge has a through hole bore therewithin with
25 a clamping screw entry opening in said narrow end of said wedge, and said second wedge has a stepped through hole bore extending between said ends of said second wedge, and said through hole bore of said second wedge is smaller in area at said narrow end of said second wedge than at said wide end thereof, and is coaxially aligned with said bore in said first wedge,

30 a fastening bolt having a head and an externally threaded shank,
and

a nut engageable with said threaded shank of said fastening bolt,

wherein said shank of said fastening bolt extends entirely through said through hole bore of said second wedge and into said bore of said first wedge, and is engaged

with said nut at said wide end of said first wedge, whereby advancement of said bolt shank within said wedges drives said wedges toward each other, thereby forcing said saddle blocks toward opposing ends of said mounting bracket to thereby clamp said steering tube saddle block against said steering tube and clamp said handlebar saddle block against said handlebar, thereby immobilizing said steering tube and handlebar relative to each other.

10. A clamping stem according to Claim 9 wherein said through hole bore in said first wedge is a stepped bore with a non-circular recess at said wide end of said first wedge, and said nut is set into said non- circular recess and thereby immobilized from rotation.